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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,321	03/06/2002	Giampaolo Lauria	POU920010126US1	9007

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EXAMINER	
LU, KUEN S	

ART UNIT	PAPER NUMBER
2167	

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/092,321	LAURIA ET AL.	
	Examiner	Art Unit	
	Kuen S Lu	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/01/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *#1-/3/6/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The Applicants' Amendments, filed on October 1, 2004, is noted. The Amendment made to the heading of the Abstract from "Abstract of the Invention" to "Abstract" has been accepted by the Examiner.

2. The Applicant's Remarks on claims 1-23 rejection and Declaration under 37 C.F.R. ξ 1.131, filed on October 1, 2004, have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-3, 11-12 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (U. S. Patent 6,401,121, hereafter "Yoshida") and further in view of Zwilling et al. (U. S. Patent 6,249,792, hereafter "Zwilling").

As per claims 1, 11 and 18, Yoshida teaches the following:

"automatically maintaining a file system" (See col. 9, lines 22-38 wherein Yoshida's automatic copying and deletion of files for reducing labor required for system management is equivalent to Applicant's automatically maintaining a file system);
"selecting files from the file system for deletion so as to achieve a predetermined usage level for the file system" (See col. 9, lines 22-38, col. 11,lines 52-60 and col. 12, lines 1-10 wherein Yoshida's less frequently accessed files are automatically deleted such that load distribution in accordance with the disk capacity can be performed in consonance with the frequency of employment and remaining capacity of storage can be predetermined and maintained for the copied data prior copying is equivalent to Applicant's selecting files from the file system for deletion so as to achieve a predetermined usage level for the file system); and
"deleting the files that were selected" (See col. 9, lines 22-38 and col. 11,lines 52-60 wherein Yoshida's less frequently accessed files are automatically selected and deleted is equivalent to Applicant's deleting the files that were selected).

Yoshida does not specifically teach "wherein the selecting step and the deleting step are performed automatically according to a maintenance schedule".

However, Zwilling teaches using events, such as system startup, excess free space or predetermined schedule to trigger an utility for performing files shrinking as part of file system maintenance at col. 6, lines 42-48.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Yoshida's teaching with Zwilling reference by pre-scheduling the file selection and deletion steps of file system management

because both references are devoted to file system maintenance and storage management, and the combined reference would have enabled Yoshida's system to further achieve the object of reducing the manpower required to perform the file system maintenance and storage management administration functions.

As per claims 2, 12 and 19, Yoshida further teaches the following:
"sorting the files using a sorting algorithm to produce a sorted list of files" (See col. 11, lines 52-60 and col. 12, lines 1-31 wherein Yoshida's combining teachings of less frequently accessed files selected for deletion and the smallest count of data transmission server selected for transmitting data suggests a sorting algorithm is utilized for sorting the files to produce a sorted list of files) ; and
"selecting files beginning at the top of the sorted list until deletion of the selected files would achieve the predetermined usage level for the file system" (See col. 9, lines 22-38, col. 11, lines 52-60 and col. 12, lines 1-31 col. 9, lines 22-38 wherein Yoshida's combining teachings of less frequently accessed files are automatically deleted such that load distribution in accordance with the disk capacity can be performed in consonance with the frequency of employment and remaining capacity of storage can be predetermined and maintained for the copied data prior copying and the smallest count of data transmission server selected for transmitting data suggests selecting files beginning at the top of the sorted list until deletion of the selected files would achieve the predetermined usage level for the file system).

As per claim 3, Yoshida teaches "sorting algorithm sorts files by file date or file size" (See col. 11, lines 52-60 and col. 12, lines 1-31 wherein Yoshida's combining teachings of less frequently accessed files are selected for deletion to meet the storage remaining capacity and server of smallest count of data transmission is determined suggests sorting algorithm sorts files by file date or file size).

5. Claims 4-10, 13-17 and 21-23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (U. S. Patent 6,401,121, hereafter "Yoshida") in view of Zwilling et al. (U. S. Patent 6,249,792, hereafter "Zwilling"), as applied to claims 1-3, 11-12 and 18-19 above, and further in view of Huber (U.S. Patent 6,584,551).

As per claim 4, the combined Zwilling-Yoshida reference teaches automatically maintenance of a file system by selecting and deleting files as previously described in claims 1-3, 11-12 and 18-19 rejection.

The combined Zwilling-Yoshida reference does not specifically teach "the predetermined usage level specifies a percentage of usage of the file system or an amount of usage of the file system", although Yoshida teaches determining the remaining capacity of storage of a server at col. 11, lines 52-60.

However, Huber teaches "the predetermined usage level specifies a percentage of usage of the file system or an amount of usage of the file system" (See the Abstract and col. 5, lines 33-57 wherein Huber's monitoring snapshot repository to determine if information stored in the snapshot repository has reached a pre-determined volume

increase threshold in terms of percentage is equivalent to Applicant's the predetermined usage level specifies a percentage of usage of the file system or an amount of usage of the file system).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to further combine Huber's teaching with Yoshida and Zwilling references by conveniently utilizing percentage as a basis for calculating utilized and free storage capacities for automating the expansion of the storage system when a predetermined threshold is reached because the references are devoted to file system maintenance and storage management, and the combined reference would have enabled Yoshida's system to automatically expand its capacity such that the manpower required to perform the file system maintenance and storage management administration functions could have been further reduced.

As per claims 5, 13 and 20, the combined Zwilling-Yoshida reference teaches automatically maintenance of a file system by selecting and deleting files as previously described in claims 1-3, 11-12 and 18-19 rejection.

The combined Zwilling-Yoshida reference does not specifically teach "the predetermined usage level specifies a percentage by which to reduce usage of the file system or an amount to reduce usage of the file system" or "the predetermined usage level specifies a percentage of usage of the file system or an amount of usage of the file system".

However Huber teaches "the predetermined usage level specifies a percentage by which to reduce usage of the file system or an amount to reduce usage of the file system" and "the predetermined usage level specifies a percentage of usage of the file system or an amount of usage of the file system" at the Abstract and col. 5, lines 33-57 by monitoring snapshot repository to determine if information stored in the snapshot repository has reached a predetermined volume increase threshold in terms of percentage which is also the amount of storage reduced for information storage.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to further combine Huber's teaching with Yoshida and Zwilling references by conveniently utilizing percentage as a basis for calculating utilized, reduced and free storage capacities for automating the expansion of the storage system when a predetermined threshold is reached because the references are devoted to file system maintenance and storage management, and the combined reference would have enabled Yoshida's system to automatically expand its capacity such that the manpower required to perform the file system maintenance and storage management administration functions could have been further reduced.

As per claim 6, the combined Zwilling-Yoshida reference teaches automatically maintenance of a file system by selecting and deleting files as previously described in claims 1-3, 11-12 and 18-19 rejection.

The combined Zwilling-Yoshida reference does not specifically teach "receiving the predetermined usage level" through "from a user".

However, Huber teaches receiving the predetermined usage level from a user by allowing a user to define the parameters such as storage volume, storage increase threshold and maximum size of storage volumes at col. 2, lines 22-40.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to further combine Huber's teaching with Yoshida and Zwilling references by allowing user to conveniently setting the thresholds of storage increase or decrease in terms of percentage of a maximum storage volume because the references are devoted to file system maintenance and storage management, and the combined reference would have enabled Yoshida's system to automatically and flexibly expand its capacity such that the manpower required to perform the file system maintenance and storage management administration functions could have been further reduced.

As per claims 14 and 21, the combined Zwilling-Yoshida reference teaches predetermined usage level as previously described in claims 13 and 20 rejection.

The combined Zwilling-Yoshida reference does not specifically teach "receiving the predetermined usage level" through "from a user".

However, Huber teaches receiving the predetermined usage level from a user by allowing a user to define the parameters such as storage volume, storage increase threshold and maximum size of storage volumes at col. 2, lines 22-40.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to further combine Huber's teaching with Yoshida and

Zwilling references by allowing user to conveniently setting the thresholds of storage increase or decrease in terms of percentage of a maximum storage volume because the references are devoted to file system maintenance and storage management, and the combined reference would have enabled Yoshida's system to automatically and flexibly expand its capacity such that the manpower required to perform the file system maintenance and storage management administration functions could have been further reduced.

As per claims 7, 15 and 22, the combined teaching of the Huber, Zwilling and Yoshida references further suggests the teaching of "receiving a selection of a main target" and "the main target identifying a portion of the file system that is to be maintained, wherein the selecting step and the deleting step are performed on the main target" (See col. 2, lines 22-40 wherein Huber's allowing a user to define various storage parameters such as storage volume, storage increase threshold and maximum size of storage volumes suggesting user's capability to select devices for specific storage volume for meeting the requirements of various storage parameters, including the main target for storage management, including files selection and deletion).

As per claims 8 and 23, the combined teaching of the Huber, Zwilling and Yoshida references further suggests the teaching of "receiving a selection of at least one additional target" and "each additional target identifying another portion of the file system that is to be maintained, wherein the selecting step and the deleting step are

also performed on the additional target" (See col. 2, lines 22-40 wherein Huber's allowing a user to define various storage parameters such as storage volume, storage increase threshold and maximum size of storage volumes suggesting user's capability to select devices for specific storage volume for meeting the requirements of various storage parameters, including the additional target for storage management, including files selection and deletion).

As per claim 9, the combined Zwilling-Yoshida reference teaches automatically maintenance of a file system by scheduling the selection and deletion of files as previously described in claims 1-3, 11-12 and 18-19 rejection.

The combined Zwilling-Yoshida reference does not specifically teach "receiving the maintenance schedule from a user".

However, Huber teaches receiving the predetermined usage level from a user by allowing a user to define the parameters such as storage volume, storage increase threshold and maximum size of storage volumes at col. 2, lines 22-40.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to further combine Huber's teaching with Yoshida and Zwilling references by allowing user to receive the maintenance schedule because the references are devoted to file system maintenance and storage management, and the combined reference would have enabled Yoshida's system to automatically and flexibly perform scheduled functions as defined by the user such that the manpower required to

perform the file system maintenance and storage management administration functions could have been further reduced.

As per claim 16, the combined teaching of the Huber, Zwilling and Yoshida references further suggests the teaching of "receiving the maintenance schedule from a user" (See Zwilling: col. 6, lines 42-48 wherein Zwilling's using events, such as system startup, excess free space or predetermined schedule to trigger an utility for performing files shrinking as part of file system maintenance, and Huber: col. 2, lines 22-40 wherein Huber's allowing a user to define various storage parameters such as storage volume, storage increase threshold and maximum size of storage volumes suggesting user's capability to select parameters for file maintenance and storage management, including scheduling tasks to perform such functions).

As per claims 10 and 17, the combined teaching of the Huber, Zwilling and Yoshida references further suggests the teaching of "maintenance schedule specifies that the selecting step and the deleting step are performed automatically at a defined periodic interval or at a plurality of defined times in the future" (See Zwilling: col. 6, lines 42-48 wherein Zwilling's using events, such as system startup, excess free space or predetermined schedule to trigger an utility for performing file system maintenance).

Conclusions

6. The prior art made of record

A. U. S. Patent No. 6,401,121

B. U. S. Patent No. 6,249,792

E. U. S. Patent No. 6,584,551

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

C. U. S. Publication 2003/0110190

D. U. S. Patent No. 5,930,514

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S Lu whose telephone number 571-272-4114. The examiner can normally be reached on 8 AM to 5 PM, Monday through Friday. If at tempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

Kuen S. Lu
Patent Examiner
February 2, 2005

Luke Wassum
Primary Examiner
February 2, 2005